5.3.6 HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, CULTURAL RESOURCES

The Martello Gallery-Key West Art and Historical Museum, located on airport property between the terminal automobile parking lot and South Roosevelt Boulevard (A1A), is listed on the National Register of Historic Places. A review of available documents did not identify any known archaeological sites and cultural resources in the immediate vicinity of the airport. A report entitled *A Strategic Plan for the Key West Salt Ponds* (Braun 2000) notes several features in the vicinity of the airport that may have cultural significance, however, no comprehensive survey of the area was conducted for the report to determine their significance. The features include: remnants of dikes from salt harvesting activities dating from the mid-1800's; remnants of the East Martello Battery bunker west of the runway; World War II-era blimp pads north of the airport; and abandoned missile sites.

The runway extension and RSA projects for Runway 9 will impact a portion of the abandoned bunker property, including structures. According to a quitclaim deed (dated August 8, 2000) transferring the federal property to the Monroe County Board of County Commissioners, the bunker on the property is eligible for listing in the National Register of Historic Places. In accordance with the terms of the deed, any proposed impact to the bunker will require coordination and approval of the State Historic Preservation Officer (Florida Department of State, Division of Historic Resources).

The significance of potential historic and cultural resources that may be affected by the proposed runway extension, RSA, and airfield projects will have to be determined, documented, and coordinated when an environmental study is prepared for the proposed runway improvement actions.

5.3.7 BIOTIC COMMUNITIES

The airport contains a variety of habitats and biotic communities located in an urban setting. The dominant features are the salt ponds, which contain areas of open water, wetlands, and uplands. Habitats found in this area include sea grass beds, mangrove swamps, exposed rock with marsh grass, and upland areas vegetated with indigenous and invasive plant species. The salt ponds, which have been modified by residential, commercial, military, and transportation development, comprise an estuarine habitat that is expected to be highly variable in regards to water properties (e.g., salinity, temperature).

Salt pond flora typically includes algae, Widgeon grass (*Ruppia maritima*), Spike rush (*Eleocharis cellulosa*), Shoal grass (*Halodule wrightii*), Black mangrove (*Avicennia germinans*), and Red mangrove (*Rhizophora mangle*) (Monroe County, 1997). The salt ponds provide habitat for a wide variety of wildlife, including mammals, reptiles, birds, fish, invertebrates, crustaceans, and mollusks. Bird issues may involve potential effects on migratory patterns and wetland habitat dependent species. Several species of flora and fauna classified as threatened, endangered, or of special concern, may occur in the vicinity of the airport.

Monroe County has sponsored several mitigation projects on airport property to offset airport-related impacts. Mitigation projects include the selective removal of fill material in the salt pond and the removal of invasive plant species. Removal of fill associated with abandoned roadways and military sites represent an ongoing effort to mitigate airport impacts and participate in salt pond restoration. The mitigation efforts seek to improve water flow in the salt ponds and help restore benthic, aquatic, and upland habitats.

The area potentially impacted by the proposed airport projects have been identified as Essential Fish Habitat (EFH) by the South Atlantic Fishery Management Council (SAMFC). Categories of EFH found within the project area may include scrub/shrub mangroves, estuarine emergent wetlands, intertidal flats, seagrasses, and coral and hardbottom reef habitats. Several of these categories of EFH have also been designated as Habitat Areas of Particular Concern (HAPC) by the SAMFC. Federally managed species associated with mangrove, seagrass, and wetland habitat include postlarval, juvenile, and adult gray, lane and schoolmaster snappers; juvenile Goliath grouper and mutton snapper; and adult white grunt.

The proposed airport projects will have the potential to impact water, benthic, and upland habitats. As such, environmental studies for proposed airport development actions will require a systematic survey of the biotic communities and an evaluation of potential impacts to those systems. The proposed airport projects affecting wetlands and other natural resources will require permit approval and mitigation.

5.3.8 ENDANGERED AND THREATENED SPECIES

A Draft Environmental Assessment prepared for EYW in 1993 included coordination with state and federal agencies in regard to threatened and endangered species. The coordination effort and field observations identified a listing of species known to occur in the vicinity of the airport that are classified as threatened, endangered, candidate, or of special concern by the US Fish and Wildlife Service and/or the State of Florida. The listing includes a variety of indigenous fish, bird, and mammal species that inhabit coastal and estuarine habitats. The *Monroe County Year 2010 Comprehensive Plan* (Monroe County, 1997) examined biological communities in Monroe County and identified forty-five vertebrate species, four invertebrate species, and eighty-two plant species listed by federal and state authorities as endangered, threatened, or of special concern. A database maintained by the Florida Fish and Wildlife Conservation Commission was reviewed for this overview and it was noted that the status for the Bald eagle (*Haliaeetus leucocephalus*) has been upgraded from endangered to threatened.

A summary of threatened and endangered species known to occur in the vicinity of EYW, as identified in the 1993 Draft Environmental Assessment, is provided in Table 5.3 for information purposes only. The preparation of environmental documents for the proposed airport projects will require new coordination with state and federal agencies to determine the current status of listed species, and newly-listed species, known to occur in the vicinity of the airport. The agency coordination will likely need to be supported by field surveys to identify species and/or their critical habitat that may have the potential to be impacted by the proposed project(s).

TABLE 5.3
SUMMARY OF THREATENED AND ENDANGERED SPECIES KNOWN TO OCCUR IN THE VICINITY OF EYW
Key West International Airport
Master Plan Update

Common Name	Species Name	Federal Status	Florida Status
Plants			
Tamarandillo	Acacia choriophylla	-	Endangered
Dildo cactus	Cereus pentagons	Candidate	Threatened
Porter's broom spurge	Chamaesyce porteriana var scoparia	Candidate	Endangered
Joewood	Jacquinia keyensis	-	Endangered
Bay Cedar	Suriana maritima	-	Endangered
Sea lavender	Tournefortia gnaphalodes	-	Endangered
Twisted airplant	Tilandsia circinata	-	Threatened
Fishes			
Key Silverside	Menidia conchorum	-	Threatened
Reptiles			
Lower Keys red rat snake	Elaphe guttata	-	Special Concern
Florida Keys mole skink	Eumeces egregius egregius	Candidate	Threatened
Key mud turtle	Kinosternon baurii	-	Endangered
Birds			
Roseate spoonbill	Ajaia ajaja	-	Special Concern
White-crowned pigeon	Columba leucocephala	Candidate	Threatened
Little blue heron	Egretta caerulea	-	Special Concern
Reddish Egret	Egretta rufescens	-	Special Concern
Snowy Egret	Egretta thula	-	Special Concern
Tricolored heron	Egretta tricolor	-	Special Concern
White ibis	Eudocimus albus	-	
Southeastern American kestrel	Falco sparverius paulus	-	Threatened
Bald eagle	Haliaeetus leucocephalus	Threatened	Threatened
Osprey	Pandion haliaetus	-	Special Concern
Brown Pelican	Pelecanus occidentalis	-	Special Concern
Least tern	Sterna antilllarum	-	Threatened
Roseate tern	Sterna dougallii	Threatened	Threatened
Mammals			
West Indian manatee	Trichechus manatus	Endangered	Endangered

Adapted from:

Draft Environmental Assessment – Key West International Airport Improvements, Dames & Moore (1993).

Florida Fish and Wildlife Conservation Commission, 1997.

5.3.9 WETLANDS

Wetlands surround much of the airport property. The setting for the wetlands is within, and associated with, salt ponds which can generally be described as a network of shallow impoundments with limited tidal flow. The salt ponds and wetlands have been altered over time by airport, residential, military, commercial, and roadway development.

Wetlands on, and adjacent to, airport property are comprised of several types habitat. Figure 5.4 depicts the wetland resources that have the potential to be affected by the proposed airport projects. The subject wetlands are classified under the Florida Land Use, Cover and Forms Classification System (FLUCFCS) as bays and estuaries; mangrove swamps; and exposed rock with marsh grasses. It should be noted that a comprehensive delineation and inventory of wetland resources on airport property has not been conducted. Over the years, individual projects have resulted in the delineation of wetlands in specific areas on the airport.

The proposed runway and taxiway development, as well as the associated grading of the RSA, are anticipated to impact approximately 37.8 acres of wetlands, subject to review and approvals by regulatory agencies. Anticipated wetland impacts, by type, are presented in Table 5.4.

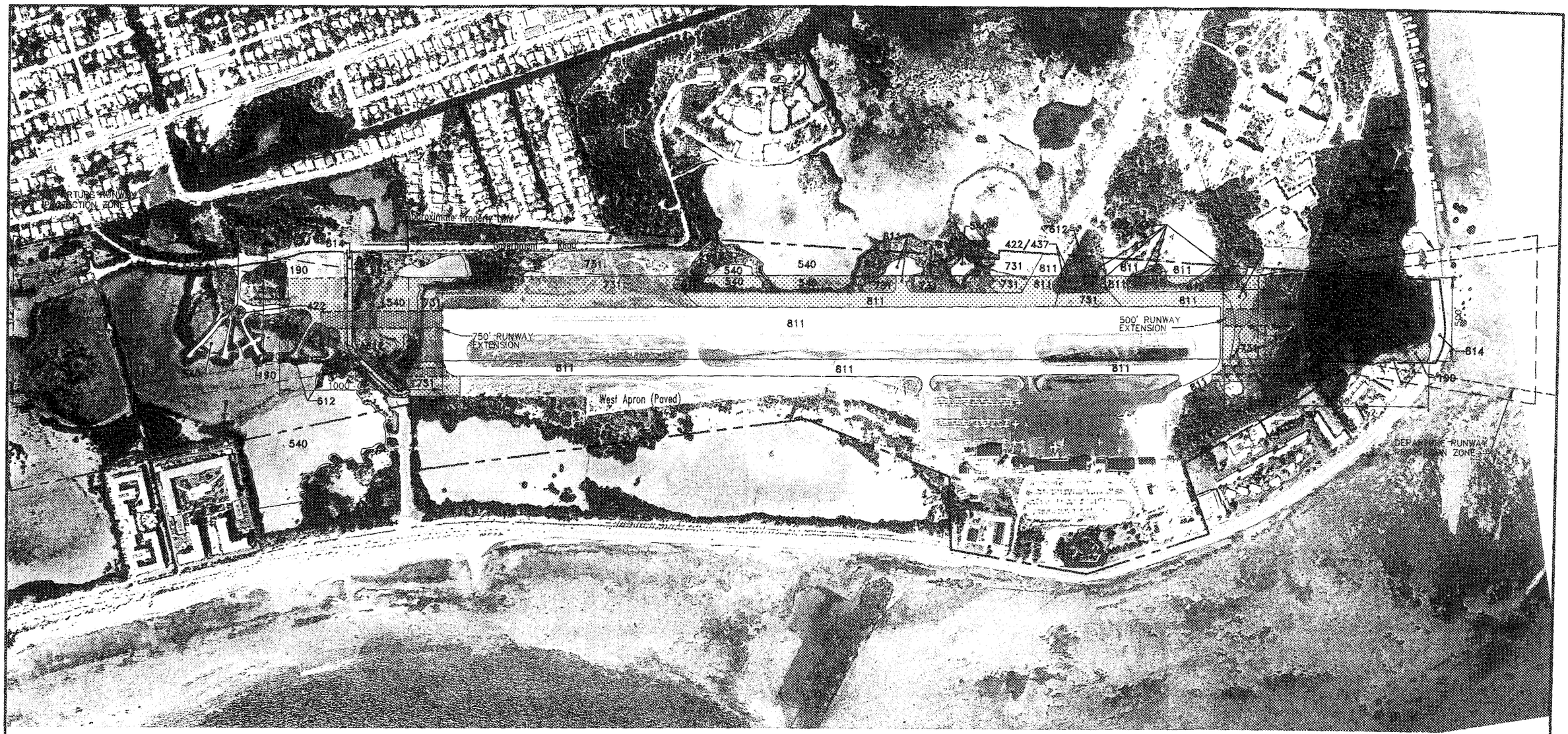
TABLE 5.4
POTENTIAL WETLAND IMPACTS – PROPOSED RUNWAY EXTENSION ALTERNATIVE
Key West International Airport
Master Plan Update

Wetland Classification	FLUCFCS Code	Area Impacted (acres)
Bays and Estuaries	540	3.9
Mangrove Swamps	612	22.5
Exposed Rock/Marsh Grass	731	11.4
Total		37.8

Source: URS Corporation, 2002.

Some additional wetlands may be impacted by the planned redevelopment of the general aviation hangar area located west of the aircraft parking apron. The redevelopment of the hangars in this area is anticipated to impact less than one acre of wetland. The County is currently applying for a permit to place fill in this wetland area.

The required NEPA environmental documentation and subsequent permit application process for the proposed airfield developments (whether an RSA project for the existing runway or for the runway extension) will require the detailed evaluation of alternatives. Of special concern to the permitting agencies are alternatives that first avoid the wetland resources, then minimize any unavoidable impacts. Upon meeting these requirements, the state and federal permit application process will require mitigation for unavoidable wetland losses and impacts. Typical mitigation scenarios may include replacement, restoration, enhancement, and/or preservation of wetlands. Based on recent studies, it is likely that the mitigation for the impacts will include a combination of mitigation methods applied to on-site and off-site mitigation projects. The physical nature of



PRELIMINARY PROJECTED IMPACTS (ACRES)	
FLUCFCS CODE	TOTAL
190	3.0
422/437	2.3
540*	3.9
612*	22.5
731*	11.4
811	7.5
814	0.6
TOTAL	51.2

* TOTAL WETLANDS (540,613,731) = 37.8 ACRES.

FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS)

190	OPEN LAND
422/437	BRAZILIAN PEPPER/ AUSTRALIAN PINE
540	BAYS AND ESTUARIES
612	MANGROVE SWAMPS
731	EXPOSED ROCK WITH MARSH GRASSES
811	AIRPORT
814	ROADS AND HIGHWAYS

LEGEND

- AIRPORT PROPERTY LINE
- EXISTING AIRPORT BUILDINGS
- RUNWAY SAFETY AREA
- APPROACH RUNWAY PROTECTION ZONE
- DEPARTURE RUNWAY PROTECTION ZONE
- AREA OF PROJECTED DIRECT IMPACT
- PROPOSED RUNWAY

N

600 0 600

GRAPHIC SCALE IN FEET

WETLANDS RESOURCES

Key West International Airport

Master Plan Update

FIGURE: 5.4

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the Florida Keys limits the opportunity for single, large-scale mitigation opportunities. It is likely that several smaller projects would be combined to provide mitigation.

5.3.10 FLOODPLAINS

EYW is located within a special flood hazard area inundated by 100-year floods. Portions of the airport located in the flood hazard area are also subject to coastal flooding with velocity (wave) hazard (FEMA, 1997). The airport is subject to flooding from heavy precipitation and periodic storm surges associated with hurricanes.

The proposed runway projects should be designed to comply with local flood regulations and Executive Order 11988, *Floodplain Management*, to "reduce the risk of flood loss and minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

5.3.11 COASTAL ZONE MANAGEMENT PROGRAM

The Florida Coastal Management Program (FCMP) consists of a network of statutes administered by eleven state agencies and four of the five water management districts. The FCMP is designed to ensure the prudent use and protection of the state's coastal resources. Under provisions of the federal *Coastal Zone Management Act* of 1972, any federal activity that has the potential to impact Florida's coastal resources is reviewed for consistency with the FCMP. If state review determines a project is not consistent with Florida's statutes, the FCMP can require that the applicant revise its plans. The proposed airport projects, funded in part by the Federal Aviation Administration, will require that the projects be submitted for FCMP consistency review.

The airport is not located within a barrier island or coastal barrier resource unit. As such, the provisions of the *Coastal Barrier Resources Act* do not apply.

5.3.12 WILD AND SCENIC RIVERS

There are no Wild and Scenic Rivers, or stream segments included in the Nationwide River Inventory, in the vicinity of EYW.

5.3.13 FARMLAND

The soils and land uses found on, and in the vicinity of, the airport do not meet prime farmland criteria and are not subject to the requirements of the *Farmland Protection Policy Act.*

5.3.14 ENERGY SUPPLY AND NATURAL RESOURCES

The improvements to the terminal and airfield facilities at EYW are expected to generate a slight increase in the demand for electrical power. The additional electricity demand anticipated from the proposed airport expansion should not be substantial and should be supplied through existing power distribution systems.

Mineral resources in the vicinity of the airport include limestone and sand. The operation and proposed projects to the airport should not impact any mineral resources which could be considered to be in short supply or unusual in nature.

5.3.15 LIGHT EMISSIONS

Airfield lighting currently in use at EYW includes Medium Intensity Runway Lights (MIRL), Medium Intensity Taxiway Lights (MITL), and Runway End Identifier Lights (REIL). Visual Approach Slope Indicator (VASI) lights are installed for both runway approaches. Other airfield lighting includes outdoor area lighting at the aircraft parking apron, terminal building, parking lot, and aircraft storage hangars. The proposed airfield projects would include the installation of new runway and taxiway edge lights in association with the proposed runway and taxiway extensions. The proposed runway extension will not require the relocation of the runway threshold lights and Runway End Identifier Lights. An approach lighting system for the runway is not proposed.

Lighting impacts are normally concerned with the extent to which airport lighting would create an annoyance among residents or traffic in the vicinity of the airport. EYW is located in an urbanized setting with residential developments (single-family residences and condominiums) and roadways located nearby. Substantial impacts related to airport lighting are not anticipated since the lighting configuration will change little from existing conditions. However, the issue will need to be reviewed in more detail in the environmental study required for the proposed runway project.

5.3.16 CONSTRUCTION IMPACTS

Construction activity has the potential to produce temporary impacts in areas on or adjacent to the airport. Measures to minimize these impacts will be implemented in accordance with FAA established procedures before construction on any improvements begin. The incorporation of the provisions and specifications of FAA Advisory Circular 150/5370-10, *Standards for Specifying the Construction of Airports*, Item P-156, should be used in order to avoid and/or minimize adverse construction impacts.

5.3.17 ENVIRONMENTAL JUSTICE

The projects proposed at EYW are not expected to unfairly or adversely impact any group of people, including racial, ethnic, or socioeconomic groups. Detailed review of census data should be accomplished in the preparation of environmental documents for the proposed runway projects to document the demographic profiles of neighborhoods potentially affected by the proposed airport projects.

SECTION 6
DEVELOPMENT PLANS

6.1 INTRODUCTION

This section of the study presents the plans for the future development of Key West International Airport (EYW). The development shown on these plans is based upon information contained in the preceding section of this report, as well as input from the study's Advisory Committee. These plans present how the airport could be developed through 2021. All facilities are drawn to scale and represent the implementation of recommendations presented in the previous sections.

The plans contain the following:

- Airport Layout Plan
- Terminal Area Plan
- Airport Airspace Plan
- On Airport Land Use Plan
- Airport Property Map

The following paragraphs describe these plans.

6.2 AIRPORT LAYOUT PLAN

The airport layout plan (ALP) serves as a guide for development at the airport through 2021. It provides a scaled depiction of all existing and proposed facilities, their location on the airport, and the associated FAA design standards. A reduced size version of the ALP is illustrated in Figure 6.1. A brief discussion of the major elements of the ALP is provided in the following paragraphs.

6.2.1 RUNWAYS

Proposed development associated with Runway 9/27 consists of two projects. The first project consists of bringing the runway's safety area into conformance with FAA design standards for airport reference code C-III facilities. The second project consists of extending the runway by 750 feet on its west-end and 500 feet on its east-end.

The runway safety area project would consist of filling ponds, removing vegetation, and grading land around the runway to meet the FAA's clearance and grading requirements. The proposed runway safety area would have a width of 500 feet and a length that extends 1,000 feet past the Runway 9 threshold and 1,250 feet past the Runway 27 threshold. Although the FAA's standard only requires a length of 1,000 feet beyond the end of pavement, a safety area of 1,250 feet is proposed for the east-end of the runway. By extending the runway safety area on the east-end, an additional 250 feet of the proposed runway extension on the east-end could be considered in

takeoff and landing calculations. This would increase the effective runway length for departures on Runway 9 to 5,801 feet with the proposed runway extensions.

The runway extension project would provide 5,801 feet of useable runway for departures to the east and 5,301 feet of useable runway for departures to the west. The landing distance on Runway 9 would increase to 5,051,while the landing distance of Runway 27 would remain 4,801 feet. The location of landing thresholds would not change. Therefore, aircraft landing at EYW would pass over surrounding land uses at the same elevation as they do with the existing runway.

The construction of a standard runway safety area and the proposed runway extensions would require numerous environmental approvals due to impacts that would occur to surrounding wetlands, salt ponds, and mangroves. In order to obtain such approvals, appropriate mitigation measures would be required. Due the limited availability of land in the Key West area, such mitigation measures may be difficult or cost prohibitive. In order to explore this issue and provide the information to the FAA, a feasibility study is examining the issues associated with mitigation and environmental approvals. Information from the study will be forwarded to Monroe County and the FAA so that a determination can be made regarding the projects' feasibility.

If the feasibility of the projects appears high, the next step would be the preparation of an Environmental Impact Statement (EIS). Information obtained from the preparation of the EIS would then be used to seek permits from the appropriate environmental agencies.

If the feasibility of the project is determined to be low, or environmental approvals ultimately cannot be obtained, a different course of action from that outlined above will be required. This may entail the consideration of runway safety area improvements that are less than FAA standards, but more than currently exists around the runway. Further consultation with the FAA would be required at that point to define a course of action.

6.2.2 TAXIWAYS

The only taxiway projects included in the plan are extensions of Taxiway A to serve the proposed extensions at each end of Runway 9/27. The westward extension of Taxiway A is proposed to angle toward Runway 9 to minimize impacts to the adjacent salt pond. This configuration does have drawbacks. Specifically, it would increase the distance from the runway threshold to the taxiway hold line in order to keep aircraft outside the runway's safety area. Further, evaluation of this issue may be required at the time of preliminary design.

The eastward extension of Taxiway A is proposed in a standard parallel configuration that would enable aircraft to taxi to the extended east end of the runway. The construction of this taxiway segment would necessitate the demolition, or relocation, of the National Weather Service's balloon launch facility. It is anticipated that the balloon launch facility will no longer be in use at the time a runway extension is pursued. The National Weather Service office currently

RUNWAY DATA TABLE

ITEM		RUNWAY 9/27 EXISTING		RUNWAY 9/27 ULTIMATE	
RUNWAY LENGTH/WIDTH (FT.)		4,801/100		6,051/100	
AIRPORT REFERENCE CODE (ARC)		C-III		C-III	
EFFECTIVE RUNWAY GRADIENT %		0.0		0.0	
RUNWAY PAVEMENT STRENGTH (LBS.)					
SINGLE-WHEEL		40,000		40,000	
DUAL-WHEEL		95,000		95,000	
DUAL-WHEEL TANDEM		130,000		130,000	
RUNWAY PAVEMENT TYPE		ASPHALT/GROOVED		ASPHALT/GROOVED	
RUNWAY LIGHTING		MIRL		MIRL	
RUNWAY MARKING		VISUAL		NON-PREC	
APPROACH VISIBILITY MINIMUMS		1 MILE/1 MILE		1 MILE/1 MILE	
CRITICAL AIRCRAFT (WINGSPAN)		DASH-8		DASH-8	
CRITICAL AIRCRAFT (APPROACH SPEED)		CRJ-700		CRJ-700	
RUNWAY SAFETY AREA (DESIGN STANDARD)					
WIDTH		500		500	
LENGTH BEYOND END OF RUNWAY		1,000		1,000	
RUNWAY SAFETY AREA (ACTUAL)					
WIDTH		300		500	
LENGTH BEYOND END OF RUNWAY		110/210		1,000	
OBJECT FREE AREA (DESIGN STANDARD)					
WIDTH		800		800	
LENGTH BEYOND END OF RUNWAY		1,000		1,000	
OBJECT FREE AREA (ACTUAL)					
WIDTH		500		500	
LENGTH BEYOND END OF RUNWAY		110/210		1,000	
RUNWAY END COORDINATES (NAD 83)	R/W 9 LAT.	24°33'21.7924" N		24°33'21.714" N	
	R/W 9 LONG.	81°46'00.3647" W		81°46'08.487" W	
	R/W 27 LAT.	24°33'22.2937" N		24°33'22.348" N	
	R/W 27 LONG.	81°45'08.3658" W		81°45'02.951" W	
RUNWAY ENDS		9	27	9	27
RUNWAY END ELEVATION		2.7	2.5	SAME	SAME
FAR 77 RUNWAY CATEGORY		NON-PREC	NON-PREC	NON-PREC	NON-PREC
FAR 77 APPROACH SURFACE SLOPES		34:1	34:1	34:1	34:1
APPROACH AIDS					
ELECTRONIC NAVIGATIONAL AIDS		VOR/NDB, GPS	VOR/DME, GPS	SAME	SAME
VISUAL APPROACH AIDS		REIL/VASI	REIL/VASI	SAME	SAME

AIRPORT DATA TABLE

ITEM		EXISTING	ULTIMATE
OFFICIAL AIRPORT ELEVATION (MSL)		3	3
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	LAT:	24°33'22.0441" N	24°33'22.032" N
	LONG:	81°45'34.3653" W	81°45'35.718" W
NORMAL MAXIMUM HOTTEST MONTH (JULY)		89.5°F	SAME
AIRPORT SERVICE LEVEL (NPIAS)		PR	PR
TERMINAL NAVAIDS		NDB/VOR	NDB/VOR
TAXIWAY LIGHTING		MITL	MITL
AIRPORT ACREAGE (FEE SIMPLE)		254.79	SAME
AIRPORT VISUAL AIDS		BEACON, LIGHTED WIND CONE	SAME

DECLARED DISTANCES

RUNWAY	TORA	TODA	LDA	ASDA
9 (EXISTING)	NONE	NONE	NONE	NONE
27 (EXISTING)	NONE	NONE	NONE	NONE
9 (FUTURE)	6,051	6,051	5,551	5,301
27 (FUTURE)	6,051	6,051	4,801	5,301

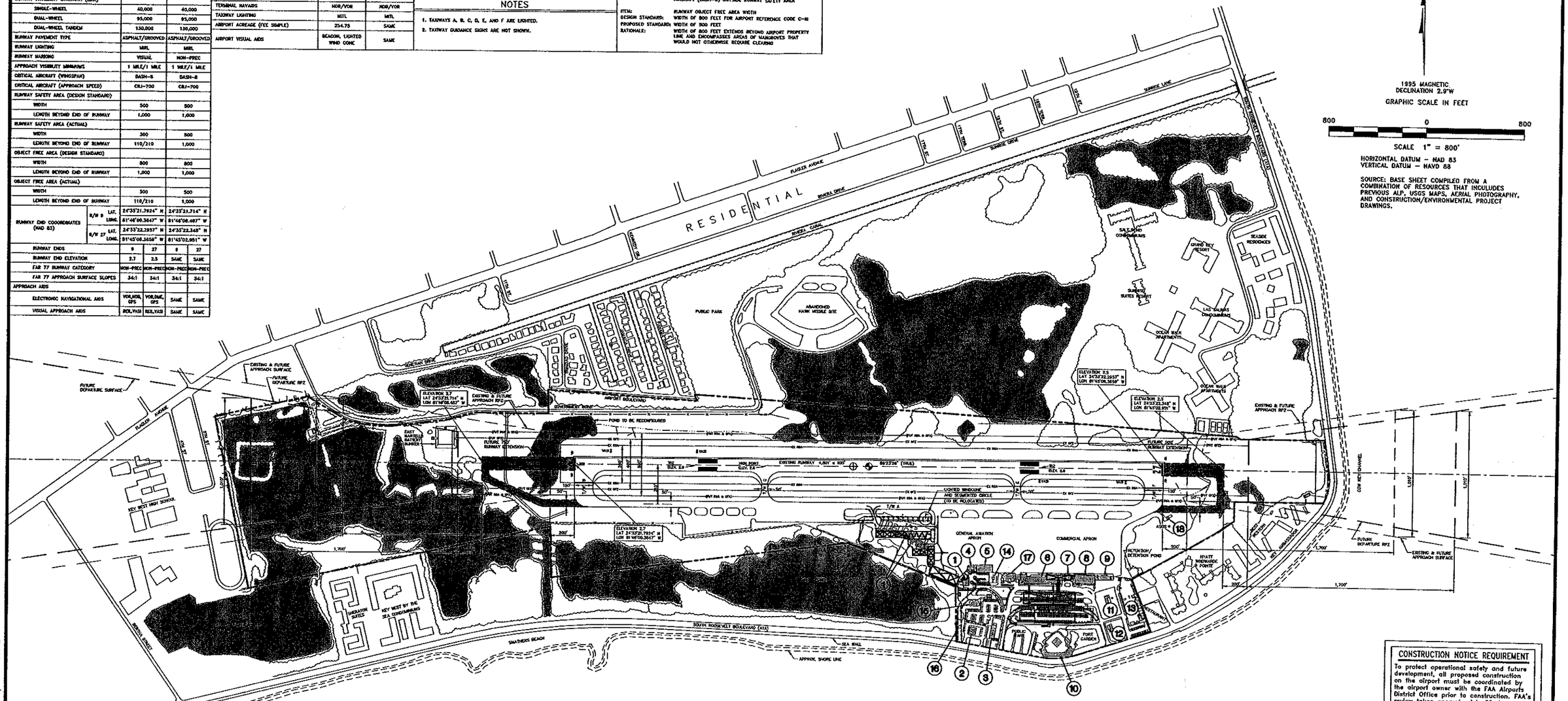
NOTES

1. TAXIWAYS A, B, C, D, E, AND F ARE LIGHTED.
2. TAXIWAY GUIDANCE SIGNS ARE NOT SHOWN.

PROPOSED MODIFICATIONS TO FAA AIRPORT DESIGN STANDARDS

ITEM:
DESIGN STANDARD: RUNWAY CENTERLINE TO TAXIWAY CENTERLINE SEPARATION
PROPOSED STANDARD: 400 FEET FOR AIRPORT REFERENCE CODE C-III
RATIONALE: 315 FEET
EXISTING SEPARATION WILL KEEP WINGTIP OF CRITICAL AIRCRAFT (DASH-8) OUTSIDE RUNWAY SAFETY AREA

ITEM:
DESIGN STANDARD: RUNWAY OBJECT FREE AREA WIDTH
PROPOSED STANDARD: WIDTH OF 800 FEET FOR AIRPORT REFERENCE CODE C-III
RATIONALE: WIDTH OF 500 FEET
WIDTH OF 800 FEET EXTENDS BEYOND AIRPORT PROPERTY LINE AND ENCOMPASSES AREAS OF MANGROVES THAT WOULD NOT OTHERWISE REQUIRE CLEARING



ATLANTIC OCEAN

N

1995 MAGNETIC DECLINATION 2.9°W

GRAPHIC SCALE IN FEET

800 0 800

SCALE 1" = 800'

HORIZONTAL DATUM – NAD 83
VERTICAL DATUM – NAVD 88

SOURCE: BASE SHEET COMPILED FROM A COMBINATION OF RESOURCES THAT INCLUDES PREVIOUS ALP, USGS MAPS, AERIAL PHOTOGRAPHY, AND CONSTRUCTION/ENVIRONMENTAL PROJECT DRAWINGS.

CONSTRUCTION NOTICE REQUIREMENT

To protect operational safety and future development, all proposed construction on the airport must be coordinated by the airport owner with the FAA Airports District Office prior to construction. FAA's review takes approximately 60 days.

AIRPORT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE)_____ DATE:_____

NAME:_____

TITLE:_____

BUILDING LEGEND

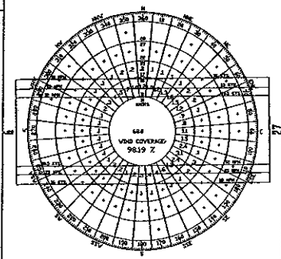
NUMBER	DESCRIPTION	± ELEV.
1	AIRCRAFT STORAGE HANGARS	24'
2	FLORIDA HIGHWAY PATROL STATION	29'
3	TEENAGE CENTER OF KEY WEST	29'
4	FBO OFFICE	15'
5	FBO MAINTENANCE HANGAR	34'
6	AIRPORT PASSENGER TERMINAL	55'-ANT
7	TERMINAL ANNEX	18'
8	FEDERAL INSPECTION STATION	35'
9	FEDERAL EXPRESS CARGO TERMINAL	20'
10	EAST MARTELLO GALLERY AND MUSEUM	40'
11	AVIS RENTAL CAR	16'
12	DOLLAR RENTAL CAR	18'
13	DEPARTMENT OF PUBLIC WORKS	20'
14	AIRPORT TRAFFIC CONTROL TOWER	80'-ANT
15	AVIATION FUEL FARM	16'
16	STORAGE BUILDING	15'
17	ARFF STATION	39'
18	NWS BALLOON LAUNCH FACILITY	37'

* – APPROXIMATE TOP ELEVATION (ABOVE MSL)
ANT – ELEVATION IS TO TOP OF ANTENNA

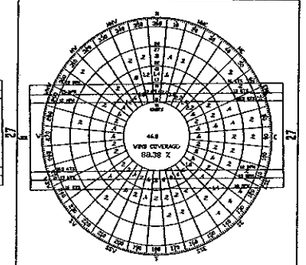
LEGEND

ITEM	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRFIELD PAVEMENT		
BUILDINGS		
ROADS & PARKING		
SECURITY FENCE		
BUILDING SAFETY AREA	—RSA—	(RSA)
RUNWAY OBJECT FREE AREA	—OFA—	(OFA)
RUNWAY OBJECT FREE ZONE	—OFZ—	(OFZ)
WATER/WETLAND		N/A
TREE LINE/GREEN BELT		N/A
THRESHOLD LIGHTS		
REIL		
VASI		
ARP		
AIRPORT BEACON		
LIGHTED WIND SOCK AND SEGMENTED CIRCLE		

ALL WEATHER WIND ROSE



IFR WIND ROSE



AIRPORT LAYOUT PLAN

Key West International Airport
Master Plan Update

FIGURE: 6.1

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located at the airport is scheduled to move off airport property in 2004. Consequently, it is expected that another balloon launch facility will be constructed off-site. However, if relocation on airport property is required, the facility could be relocated in roughly the same area, but just outside of the proposed taxiway's clearance lines. The clearance requirement for taxiways serving aircraft in design group III is 93 feet. An area of clear land exists just outside this clearance requirement that is suitable for the relocation of the facility.

6.2.3 NAVIGATIONAL AIDS

As previously noted in Section 3.2.3.12, there is a desire to have precision approach capability at EYW. Two options were noted for this to occur at EYW: WAAS or TLS. As noted, there are still are number of hurdles that must be overcome for WAAS to become a viable option for providing precision approach capability including operator equipment issues. Therefore, it appears that TLS is the most viable option for providing precision approach capabilities at EYW in the short term. It is recommended that further evaluation of this option be explored through consultation with tenant airlines.

6.3 TERMINAL AREA PLAN

6.3.1 PASSENGER TERMINAL

The plan provides two options for future terminal facilities. These options depend on funding availability and the willingness of Monroe County to issue bonds to cover the cost of constructing a new passenger terminal.

The preferred option is the construction of new passenger terminal. As described in Section 4, the master plan update Advisory Committee expressed an interest in pursuing the revised version of Concept D as the preferred terminal plan. This concept proposes the construction of an approximately 50,000-square-foot terminal with an elevated access road and elevated parking structure in the area currently occupied by automobile parking. A concourse facility would extend over Faraldo Circle and would extend to the current edge of aircraft parking apron. The existing passenger terminal would remain in operation until such time the new terminal became operational. The terminal area plan is depicted in Figure 6.2.

The proposed terminal would be elevated to meet floodplain requirements and to allow the construction of an elevated concourse walkway over Faraldo Circle. This would enable Faraldo Circle to remain operational while the new terminal is under construction.

The preferred option represents a sizeable investment and requires a commitment of Federal, state, and local funding. Estimated construction costs for this facility are $23.2 million with program costs of approximately $5.3 million for a total cost of $28.5 million. Program costs

include change order contingency, design fees, project management and construction management.

If funding is not available and Monroe County does not wish to issue bonds to finance the construction of a new passenger terminal, an alternate approach is to consider the construction of a new elevated building between the existing terminal and the FIS building. As noted in Section 4, such a building could be constructed in the space currently occupied by the terminal annex. By demolishing the terminal annex, sufficient space would exist for the construction of 8,000 square feet of new terminal. Certain facilities in the existing terminal could be relocated into the new space created by this expansion and would allow passenger processing functions inside the existing terminal to be reconfigured and expanded.

This alternate approach would provide only one-half of the increase in space needed to serve existing levels of passengers and would not provide any space to accommodate forecasted growth of passengers. Overall, it is anticipated that this approach would be pursued as a short- to intermediate-term strategy until funding could be obtained for the construction of a new terminal in the long-term.

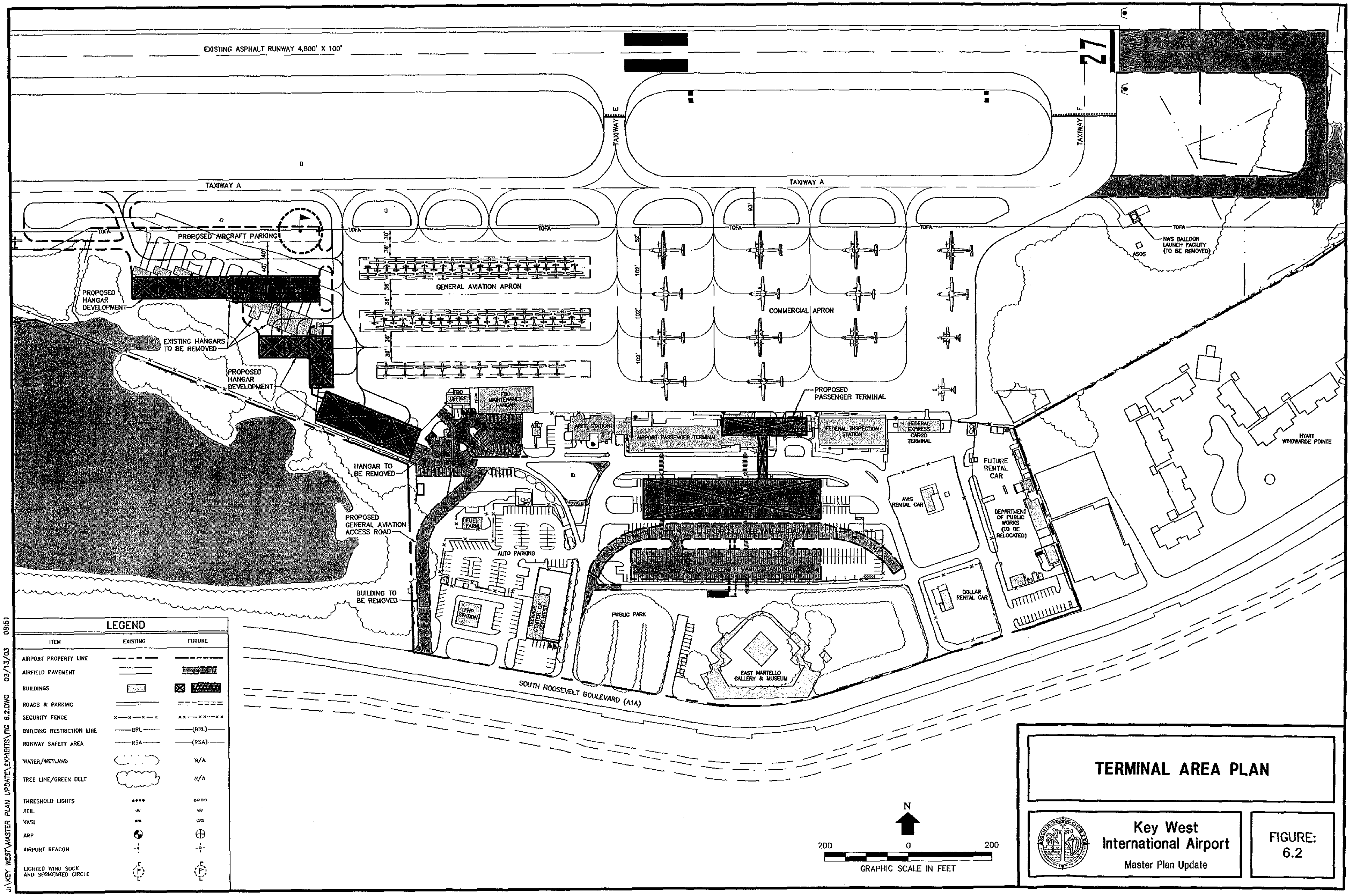
6.3.2 ROADWAY ACCESS

Construction of the revised Concept D would result in the portion of Faraldo Circle that passes in front of the existing passenger terminal being removed from use as a roadway. Passenger traffic entering the airport would use the elevated roadway to access the terminal or would enter ground level parking in front of the terminal. Access to the FIS building would also be maintained. However, vehicles that currently access the fuel farm, general aviation facilities, the air traffic control tower, and the Aircraft Rescue and Fire Fighting Station would no longer be able to access those facilities via Faraldo Circle. Therefore, a new method of accessing those facilities would be required.

A new access road is proposed to resolve this issue. This new road would be located west of the Florida State Highway Patrol building and would provide a connection from South Roosevelt Boulevard to the fuel farm, general aviation facilities, the air traffic control tower and the Aircraft Rescue and Fire Fighting Station. Construction of the road would require demolition of a small, concrete block, storage building that was associated with a National Weather Service radar facility that has been removed from the airport. Construction of the road would also require appropriate environmental approvals and permits

6.3.3 AUTOMOBILE PARKING

Automobile parking facilities proposed by the plan include the construction of an elevated parking deck across from the terminal. This parking deck could provide approximately 110 spaces and would be suitable for rental car ready/return parking. Additional parking for the public could be provided south of the elevated roadway and beneath the elevated parking



TERMINAL AREA PLAN

J:\KEY WEST\MASTER PLAN UPDATE\EXHIBITS\FIG 6.2.DWG 03/13/03 08:51

structure. Space for approximately 160 vehicles is available in this area. It is assumed, for security reasons, that parking beneath the terminal structure will not be permitted. Thus, the number of automobile parking spaces will be in the range of 270. This is significantly less than the 439 spaces that are currently provided for public and rental cars and provides no spaces to account for future growth. It was projected by the demand/capacity analysis that parking demand would increase to 700 spaces by 2021. However, it was noted that the projection was heavily influenced by rental car demands that can be influenced by operational strategies.

The fact that the preferred terminal concept would provide fewer parking spaces was discussed by members of the master plan update Advisory Committee. It was noted during these discussions that parking rates at the airport are considerably below market rates and therefore, encourage island residents to park at the airport. Adjusting these rates would encourage the use of taxis and mass transit alternatives and may reduce future demand for parking at the airport. Furthermore, the construction of additional parking areas could be considered around the proposed terminal. This issue could be explored during future terminal planning.

In conclusion, the preferred terminal concept would provide fewer parking spaces than existing conditions. Demand for parking facilities would have to be controlled through adjustments of parking rates.

6.3.4 RENTAL CAR FACILITIES

Existing rental car facilities for Avis and Dollar will remain in their existing locations. Capital improvements are planned at these facilities as part of lease renewals. These capital improvements will consist of re-paving, drainage, and aesthetic enhancements.

It is also planned that the Monroe County Department of Public Works facilities located along Stickney Road will be relocated off airport property. This parcel will then be redeveloped for rental car use. It is anticipated that rental car facilities on this parcel will consist of a service facility and parking area.

6.3.5 GENERAL AVIATION FACILITIES

Planned improvements to general aviation facilities consist of two projects. The first project will replace the existing dilapidated hangar area with new hangars and tie-downs. The second project will rehabilitate and expand the FBO automobile parking area. These projects are depicted in Figure 6.3.

The hangar project will replace the 10 existing aircraft hangars with 20 new hangars. The new hangars will consist of 12 individual hangars and 8 nested T-hangars. The plan also includes the construction of a paved apron that will accommodate approximately 10 aircraft tie-downs. The construction of this apron will require the relocation of a lighted wind cone and segmented circle.

It is proposed that the wind cone and segmented circle be relocated to a site on the north side of the runway.

The rehabilitation and expansion of the FBO automobile parking will entail the removal of one hangar and two storage buildings and the realignment of the roadway entrance to the aircraft apron. The realignment of the roadway entrance will cut across the existing automobile parking lot. Parking lost as a result of this realignment will be replaced be new parking on the southwest side of the realigned roadway.

6.4 AIRSPACE PLAN

Airspace requirements associated with airports are specified by Part 77 of the Federal Aviation Regulations. These regulations define a series of imaginary surfaces that extend upward and outward from an airport's runways. The purpose of these surfaces is to define the volume of airspace required to ensure the safe and efficient use of navigable airspace by aircraft. Objects that penetrate Part 77 surfaces are considered obstructions and may be hazards to air navigation. Therefore, it is desirable to maintain Part 77 surfaces clear of all obstructions.

The Part 77 surfaces associated with the proposed airfield will be different from those associated with the existing airfield. The primary difference will be that the primary surface will increase in length to account for the proposed extensions on the east and west ends of the runway. Likewise, the approach surfaces will shift outward due to the extensions. Airport height zoning for the City of Key West and Monroe County will need to be updated to reflect the changes from existing airspace. Figure 6.4 presents the airspace plan.

6.5 ON-AIRPORT LAND USE PLAN

Future on-airport land use will be a combination of airfield, aviation development, non-aviation development, community facilities, and environmental areas (consisting of salt ponds, mangroves and wetlands). The majority of airport land, approximately 50 percent, is used for airfield operations. The second greatest use of land, just over 30 percent of airport property, is for environmental areas. The composition of airport land is presented in Table 6.1. Figure 6.5 presents the land use plan.

TABLE 6.1
ON-AIRPORT LAND USE
Key West International Airport
Master Plan Update

Land Use	Quantity in Acres	Percent of Total
Airfield	127	50%
Aviation Development	40	16%
Non-Aviation Development	2	1%
Community Facilities	5	2%
Environmental	80	31%
Total	254	100%

℄ TAXIWAY "A"

PROPOSED TIEDOWNS

EXISTING LIGHTED WIND CONE AND SEGMENTED CIRCLE (TO BE RELOCATED)

MANGROVES

MANGROVES

MANGROVES

FBO APRON

FBO OFFICE

FBO MAINTENANCE HANGAR

STOR.

FBO PARKING

A.T.C.T.

ARFF

TERMINAL BUILDING

STOR. HANGAR

LIFT STATION

SALT POND

PROPOSED GENERAL AVIATION ACCESS ROAD

AVIATION FUEL FARM

LEGEND

- EXISTING BUILDINGS
- EXISTING BUILDINGS TO BE REMOVED
- PROPOSED HANGARS
- PROPOSED PAVEMENT

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100 50 0 100

GRAPHIC SCALE IN FEET

GENERAL AVIATION PLAN

Key West International Airport

Master Plan Update

FIGURE: 6.3

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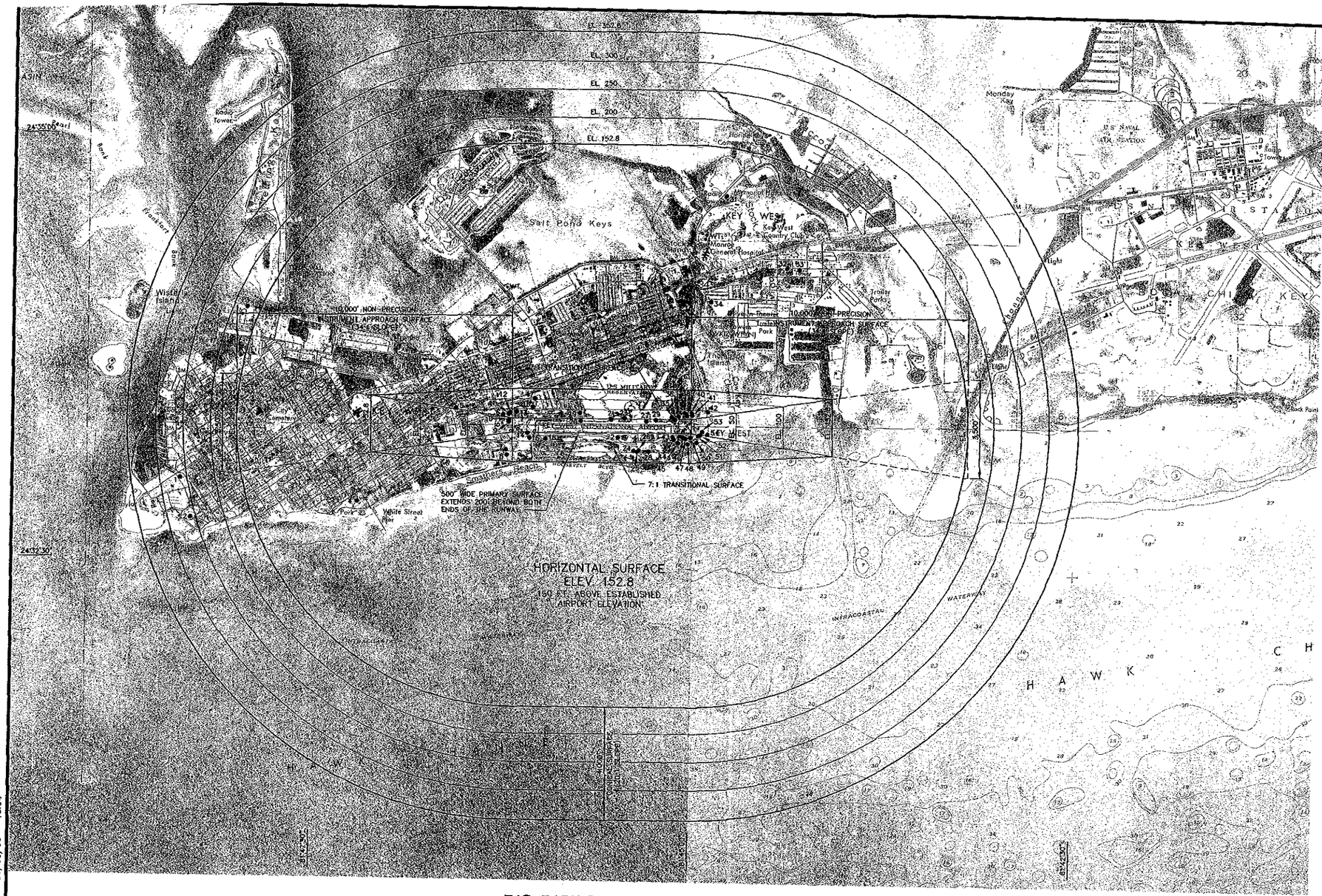
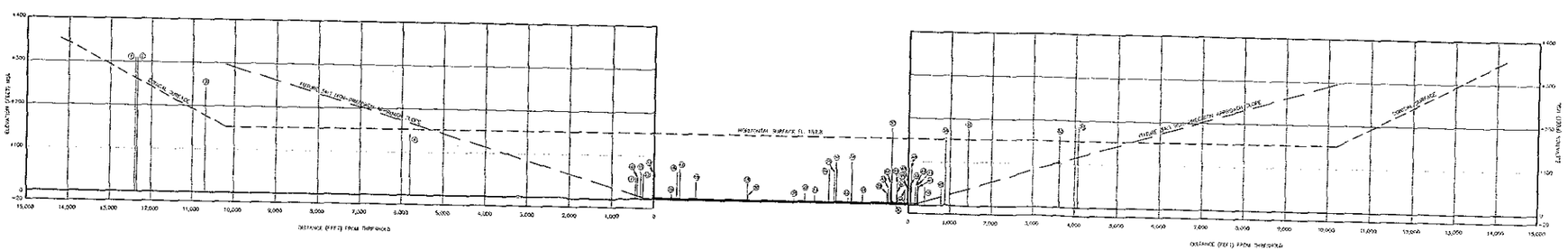


FAR PART 77 SURFACES – PLAN VIEW



FAR PART 77 SURFACES – PROFILE VIEW

OBSTRUCTION TABLE

NO.	DESCRIPTION	OBSTACLE ELEVATION FEET (MSL)	LOWEST AFFECTED FAR PART 77 SURFACE	PENETRATION (FEET)	RECOMMENDED ACTION	LIGHTED
1	TOWER	310.0	CONICAL SURFACE	17.5	NO ACTION	NO
2	OBSTRUCTION LIGHT TOWER	310.0	CONICAL SURFACE	17.5	NO ACTION	NO
3	ANTENNA ON OBSTRUCTION LIGHT	290.0	CONICAL SURFACE	50.0	NO ACTION	YES
4	POLE ON OBSTRUCTION LIGHT	242.0	CONICAL SURFACE	64.5	NO ACTION	YES
5	TREE	147.0	HORIZONTAL SURFACE	+0.8	NO ACTION	YES
6	TREE	90.0	7:1 TRANSITIONAL SURFACE	N/A	NO ACTION	YES
7	TREE	61.0	7:1 TRANSITIONAL SURFACE	38.5	TRIM OR REMOVE	NO
8	TREE	52.0	7:1 TRANSITIONAL SURFACE	11.5	TRIM OR REMOVE	NO
9	TREE	51.0	7:1 TRANSITIONAL SURFACE	+1.0	NO ACTION	NO
10	POLE	23.0	INNER APPROACH RUNWAY 9	-27.9	NO ACTION	NO
11	TREE	31.0	INNER APPROACH RUNWAY 9	18.2	TRIM OR REMOVE	NO
12	TREE	25.0	7:1 TRANSITIONAL SURFACE	17.0	NO ACTION	NO
13	TREE	60.0	7:1 TRANSITIONAL SURFACE	34.1	TRIM OR REMOVE	NO
14	TREE	52.0	7:1 TRANSITIONAL SURFACE	26.1	TRIM OR REMOVE	NO
15	BUSH	13.0	7:1 TRANSITIONAL SURFACE	26.0	TRIM OR REMOVE	NO
16	BUSH	13.0	7:1 TRANSITIONAL SURFACE	5.5	TRIM	NO
17	TREE	55.0	7:1 TRANSITIONAL SURFACE	15.3	TRIM	NO
18	TREE	72.0	7:1 TRANSITIONAL SURFACE	4.8	NO ACTION	NO
19	TREE	42.0	7:1 TRANSITIONAL SURFACE	30.5	TRIM OR REMOVE	NO
20	BUSH	19.0	PRIMARY SURFACE	8.5	NO ACTION	NO
21	TREE	15.0	PRIMARY SURFACE	17.2	TRIM	NO
22	TREE	16.0	PRIMARY SURFACE	12.2	TRIM	NO
23	OBSTRUCTION LIGHT ON SANDSOCK	27.0	7:1 TRANSITIONAL SURFACE	7.3	TRIM	NO
24	BUSH	18.0	PRIMARY SURFACE	-4.2	NO ACTION	YES
25	ANTENNA ON OBSTRUCTION LIGHT	29.0	7:1 TRANSITIONAL SURFACE	11.8	TRIM	NO
26	OBSTRUCTION LIGHT ON AIRPORT BEACON	71.0	7:1 TRANSITIONAL SURFACE	-13.3	NO ACTION	YES
27	OBSTRUCTION LIGHT ON LIGHT	54.6	7:1 TRANSITIONAL SURFACE	-35.3	NO ACTION	YES
28	BUSH	16.0	7:1 TRANSITIONAL SURFACE	-3.5	NO ACTION	YES
29	OBSTRUCTION LIGHT ON LIGHT	16.0	PRIMARY SURFACE	10.4	TRIM	NO
30	TREE	93.0	7:1 TRANSITIONAL SURFACE	3.1	NO ACTION	YES
31	ANTENNA ON OBSTRUCTION LIGHT	22.0	PRIMARY SURFACE	19.4	TRIM	NO
32	ANTENNA ON OBSTRUCTION LIGHT	178.0	HORIZONTAL SURFACE	23.2	NO ACTION	YES
33	ANTENNA ON OBSTRUCTION LIGHT	177.0	HORIZONTAL SURFACE	24.2	NO ACTION	YES
34	ANTENNA ON OBSTRUCTION LIGHT	183.0	HORIZONTAL SURFACE	19.2	NO ACTION	YES
35	OBSTRUCTION LIGHT ON TOWER	196.0	HORIZONTAL SURFACE	19.7	NO ACTION	YES
36	TREE	158.0	HORIZONTAL SURFACE	43.7	NO ACTION	YES
37	TREE	96.0	7:1 TRANSITIONAL SURFACE	5.2	NO ACTION	YES
38	TREE	11.0	PRIMARY SURFACE	13.8	TRIM OR REMOVE	NO
39	OBSTRUCTION LIGHT ON BUILDING	74.0	7:1 TRANSITIONAL SURFACE	8.5	TRIM OR REMOVE	NO
40	TREE	61.0	7:1 TRANSITIONAL SURFACE	11.5	TRIM OR REMOVE	NO
41	TREE	45.0	7:1 TRANSITIONAL SURFACE	2.5	NO ACTION	YES
42	TREE	44.0	7:1 TRANSITIONAL SURFACE	24.2	TRIM OR REMOVE	NO
43	TREE	45.0	7:1 TRANSITIONAL SURFACE	8.2	TRIM OR REMOVE	NO
44	DOME ON BUILDING	39.0	7:1 TRANSITIONAL SURFACE	19.8	TRIM OR REMOVE	NO
45	POLE ON OBSTRUCTION LIGHT	39.0	7:1 TRANSITIONAL SURFACE	-7.5	NO ACTION	NO
46	TREE	49.0	7:1 TRANSITIONAL SURFACE	14.4	NO ACTION	NO
47	TREE	30.0	7:1 TRANSITIONAL SURFACE	13.6	NO ACTION	YES
48	TREE	39.0	7:1 TRANSITIONAL SURFACE	-2.5	NO ACTION	NO
49	TREE	48.0	7:1 TRANSITIONAL SURFACE	9.9	TRIM OR REMOVE	NO
50	TREE	37.0	7:1 TRANSITIONAL SURFACE	28.3	TRIM OR REMOVE	NO
51	TREE	41.0	7:1 TRANSITIONAL SURFACE	24.7	TRIM OR REMOVE	NO
52	TREE	55.0	7:1 TRANSITIONAL SURFACE	17.5	TRIM OR REMOVE	NO
53	TREE	31.0	7:1 TRANSITIONAL SURFACE	1.8	TRIM OR REMOVE	NO
54	TREE	45.0	7:1 TRANSITIONAL SURFACE	13.3	TRIM OR REMOVE	NO
55	TREE	39.0	INNER APPROACH RUNWAY 27	21.1	TRIM OR REMOVE	NO
56	TREE	37.0	INNER APPROACH RUNWAY 27	21.5	TRIM OR REMOVE	NO
				17.5	NO ACTION	NO

NOTE: REFER TO THE INNER PORTION OF THE APPROACH SURFACE PLAN VIEW DETAILS FOR CLOSE-IN OBSTRUCTIONS.

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4000 0 4000
PLAN VIEW
GRAPHIC SCALE IN FEET

3000 0 3000
PROFILE: HORIZONTAL
GRAPHIC SCALE IN FEET

300 0 300
PROFILE: VERTICAL
GRAPHIC SCALE IN FEET

AIRSPACE PLAN

Key West International Airport
Master Plan Update

FIGURE: 6.4

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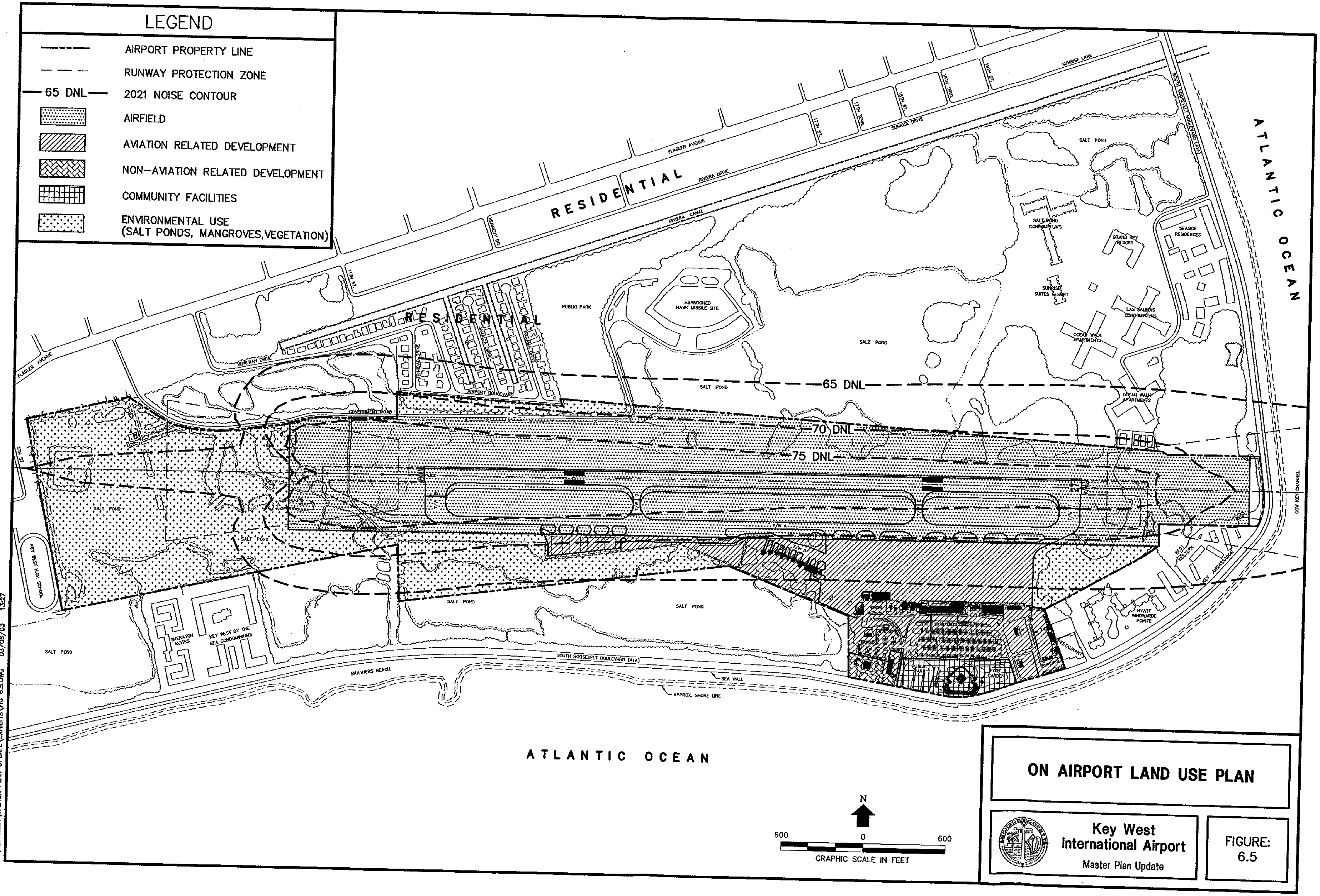

J:\KEY WEST\MASTER PLAN UPDATE\EXHIBITS\FIG 6.5.DWG 03/06/03 13:27